KUDRYAVTSEV, I.V., doktor tekhnicheskikh nauk; ALEKSANDROV, B.I., kandidat tekhnicheskikh nauk.

Effect of surface peening on the fatigue strength of (2Kh13) chromium steel at high temperatures. [Trudy] TSNIITMASH no.74: 21-41 '55. (MLRA 9:1)
(Chromium steel--Cold working) (Metals at high temperatures)

KUDRYAVTSEV, I.V., doktor tekhnicheskikh nauk; KOTIKOVA, kandidat tekhnicheskikh nauk.

Effect of surface peening on resistance to rupture under single and repeated impact. [Trudy] TSNIITMASH no.74:79-101 '55. (MLRA 9:1)
(Steel--Cold working) (Metals--Testing)

KUDRYAVTSEV, I. V.

"The influence of internal stresses on the fatigue endurance of steel," a paper presented at International Conference on Fatiuge of Metals, London, Sep. 56.

DSI. No, 103

GOL'DSHTEYN, Yakov Yefimovich; GORBUL'SKIY, Il'ya Yakovlevich; PYATAKOVA, Lyudmila Leonidovna; KUDRYAVTSEV, I.V., doktor tekhn.nauk,retsenzent; BEZUKLADNIKOV, M.A., inzh., red.; DUGINA, N.A., tekhn.red.

[Increasing the wear of tractor parts] Povyshenie dolgovechnosti traktornykh detalei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1956. 225 p. (MIRA 11:1)
(Tractors--Maintenance and repair)

AVRASIN, Ya.D., kandidat tekhnicheskikh nauk; BERG, P.P., professor, doktor tekhnicheskikh nauk, BERNSHTEYN, M.L., kandidat tekhnicheskikh nauk; GENEROZOV, P.A., starshiy nauchnyy sotrudnik; GLIKER, B.M., inzhener; DAVIDOVSKAYA, Ye.A., kandidat tekhnicheskikh nauk; YELCHIN, P.M., inzhener; YeREMIN, N.I., kandidat fiziko-matematicheskikh nauk; IVANOV, D.P., kandidat tekhnicheskikh nauk; KNOROZ, L.I., inzhener; KOBRIN, M.M., kandidat tekhnicheskikh nauk; KORITSKIY, V.G., dotsent; KROTKOV, D.V., inzhener; KUDRYAVTSEV, I.V., professor, doktor tekhnicheskikh nauk; KULIKOV, I.V., kandidat tekhnicheskikh nauk; LEPETOV, V.A., kandidat tekhnicheskikh nauk; LIKINA, A.F., inzhener; MATVEYEV, A.S., kandidat tekhnicheskikh nauk; MIL'MAN, B.S., kandidat tekhnicheskikh nauk; PAVLUSHKIN, N.M., kandidat tekhnicheskikh nauk; PTITSYN, V.I., inzhener [deceased]; RAKOVSKIY, V.S., kandidat tekhnicheskikh nauk, RAKHSHTADT, A.G., kandidat tekhnicheskikh nauk; RYABCHENKOV, A.V., professor, doktor khimicheskikh nauk; SIGOLAYEV, S.Ya., kandidat tekhnicheskikh nauk; SMIRYAGIN, A.P., kandidat tekhnicheskikh nauk, SUL'KIN, A.G., inzhener; TUTOV, I.Ye., kandidat tekhnicheskikh nauk, KHRUSHCHOV, M.M., professor, doktor tekhnicheskikh nauk; TSYPIN, I.O., kandidat tekhnicheskikh nauk; SHAROV, M.Ya., inzhener; SHERMAN, Ya.I., dotsent; SHMELEV, B.A., kandidat tekhnicheskikh nauk; YUGANOVA, S.A., kandidat fiziko-matematicheskikh nauk; SATEL', E.A., doktor tekhnicheskikh nauk, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Machine builder's reference book] Spravochnik mashinostroitelia; v shesti tomakh. izd-vo mashinostroit. lit-ry. Vol.6. (Glav. red.toma E.A.Satel'. Izd. 2-oe, ispr. i dop.) 1956. 500 p. (MLRA 9:8)
(Machinery--Construction)

KUDRYAVTSEV, Ivan Vasil'yevich, doktor tekhnicheskikh nauk; BOLTUNOV, Aleksandr Konstantinovich, inzhener; ZAIKIN, Mikhail Pavlovich; UDAL'TSOV, A.N., glavnyy redaktor; MALOV, kandidat tekhnicheskikh nauk, redaktor; KORSHUNOV, B.S., kandidat tekhnicheskikh nauk, redaktor; GRISHIN, V.M., inzhener, redaktor

[Strengthening filets of large shafts by surface peening. New construction of ring electrodes of electromachining tools. Vibration equipment for electric spark machining for hardening and metal coating] Uprochnenie galtelei krupnykh valov poverkhnostnym naklepom. Novaia konstruktsiia kol'tsevogo elektroda elektroerozionnogo stanka. Vibratsionnaia ustanovka dlia elektroerozionnogo uprochneniia i pokrytiia metallov. Moskva, 1956. 11 p. (Peredovoi proizvodstvenno-tekhnicheskii opyt. Ser.8, Mekhanicheskoe uprochnenie detalei i metody elektricheskoi obrabotki metallov. No.T-56-252/6) (MIRA 10:9)

1. Moscow. Institut tekhniko-ekonomicheskoy informatsii
(Metal cutting, Electric)

SOV/124-57-9-11035

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 9, p 162 (USSR)

AUTHORS: Kudryavtsev, I. V., Balabanov, N. A.

TITLE: The Fatigue Life of Crankshafts Manufactured From High-strength Cast Iron and Steel With Case-hardened Crankpins (Ustalostnaya prochnost' kolenchatykh valov iz vysokoprochnogo chuguna i stali s poverkhnostno zakalennymi sheykami)

PERIODICAL: V sb.: Povysheniye iznosostoykosti i sroka sluzhby mashin. Kiyev - Moscow, Mashgiz, 1956, pp 213-219

ABSTRACT: Hardening was performed on a 200-kw mechanically driven frequency changer with a frequency of 2500 cps and a power consumption of 85 kw. Shafts made of St-45 steel were heated up to 980°C within 20 seconds, those made of high-strength ferrite cast-iron were heated up to 1100°C within 40 seconds. After case-hardening the shafts were tempered in an oil-bath at 160 - 180°C for 2 hours. One series of these shafts was roll-worked under a pressure of 1750 kg. Fatigue testing was performed on a resonance-type testing machine. It was established that rolling the faired corners of shafts with case-hardened

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The Fatigue Life of Crankshafts Manufactured From High-Strength Cast Iron (cont.)

journals increased substantially the endurance of both steel and cast-iron shafts, raising it to values obtained from non-case-hardened shafts with roll-worked fairings. Under correct case-hardening or cold-hammering procedures no distortion was observed on straight (axisymmetrical) shafts. Considerable distortion can result on crankshafts but it can be eliminated effectively by the method of localized cold-hammering of the crank arms.

V. K. Pereverzev

AID P - 5061

Subject : USSR/Engineering-Welding

Card 1/1 Pub. 107-a - 1/11

Authors : Kudryavtsev, I. V., and N. A. Balabanov

Title : Fatigue strength of steel plates with welded plate stiffeners.

Periodical : Svar. proizv., 6, 1-5, Je 1956

Abstract : The authors describe their experiments with steel plates (St. 3 and 45-steels) reinforced with welded plate stiffeners. The analysis and data obtained at the Central Science Research Institute of Machine Building Technology (TsNIITMASh) upon experimentation with such steel plates has proven (contrary to expectations) that the fatigue strength of so re-inforced pieces had diminished significantly. Three tables, 3 diagrams, 2 drawings, 6 photos and GOST standards.

Institution : As above

Submitted : No date

KUDRYAVTSEV, I.V., doktor tekhnicheskikh nauk, professor; SAVVINA, N.M., kandidat tekhnicheskikh nauk.

Increasing contact fatigue strength of steel plates by surface peening. Metalloved. i obr. met no.9:31-41 S '56. (MLRA 9:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya.
(Steel--Fatigue) (Sheet steel--Cold working)

KUDRYAVTSEV, I. V.

AID P - 5589

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 1/12

Author : Kudryavtsev, I. V., Dr. of Tech. Sci., Prof. and N. M. Savvina, Kand. of Tech. Sci.

Title : Fatigue strength of joints of large section area welded by submerged arc.

Periodical : Svar. proizv., 11, 1-6, N 1956

Abstract : The authors describe the tests given to specimens of rolled 50 to 75mm thick 22K steel welded by submerged arc, and the equipment used. The results obtained from unfinished, planed and peened specimens are given. Eight drawings, 4 graphs, 3 tables; 4 Russian references (1949-56), 1 photo (4 microstructures).

Institution : Central Scientific Research Institute of Machine-Building Technology (TsNIITMASh).

Submitted : No date

KODRYATSEV, I. V.

14842* (Russian) Effects of the Material of Surrounding Parts on the Fatigue Strength of Axles and Shafts. Vliianie [illegible]

[illegible] of roller bearings

5

KUDRYAVTSEV, I. V.

GLINER, Boris Moiseyevich; KUDRYAVTSEV, I.V., professor, retsenzent; KOBRIN, M.M., kandidat tekhnicheskikh nauk, redaktor; BEYZEL'MAN, R.D., redaktor izdatel'stva; UVAROVA, A.F., tekhnicheskiy redaktor

[Determining mechanical and technological properties of metals; concise handbook] Opredelenie mekhanicheskikh i tekhnologicheskikh svoistv metallov; kratkoe spravochnoe posobie. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 155 p. (MLRA 10:9)
(Metals)

KUDRYAVTSEV, I.V., doktor tekhnicheskikh nauk, professor; SAVVINA, N.M.; BARANOVA, N.B., kandidat tekhnicheskikh nauk; BALABANOV, N.A.; BOGACHEV, I.N., doktor tekhnicheskikh nauk, professor, retsenzent; KLOCHNEV, N.I., kandidat tekhnicheskikh nauk, redaktor; SIROTIN, A.I., inzhener, redaktor izdatel'stva; MATVEYEVA, Ye.N., tekhnicheskiy redaktor

[Structural strength of nodular cast iron] Konstruktsionnaia prochnost' chuguna s sharovidnym grafitom. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 158 p. (MLRA 10:6)
(Cast iron)

137-58-6-12299

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 159 (USSR)

AUTHORS: Kudryavtsev, I.V., Savvina, N.M.

TITLE: Surface Hardening as a Means of Increasing the Fatigue Strength of Shafts with Stationary Fits (Poverkhnostnyy naklep kak sredstvo povysheniya ustalostnoy prochnosti valov s nepodvizhnymi posadkami)

PERIODICAL: V sb.: Vopr. konstrukts. prochnosti stali. Moscow, Mashgiz, 1957, pp 5-39

ABSTRACT: Experiments establish that the fundamental cause for increase in fatigue strength (FS) of knurled axles and shafts (S) with gripping sleeves is residual compressive stress. Grinding away or turning the knurled layer to a depth of 30% of the total depth of work-hardening decreases only insignificantly the FS of S carrying fixed sleeves. The hardness of the material of the gripping sleeves, made of St of various compositions, has no significant effect upon the FS of S made of Nr 45 steel. An increase in the endurance limit of S by surface hardening is achieved after the first pass of the knurling rolls, and subsequent passes (≤ 10) do not cause further rise in FS. Ye.L.

Card 1/1

1. Metals--Hardening 2. Metals--Processing 3. Metals--Mechanical properties

KUDRYAVTSEV, I.V.

137-58-2-3010

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 112 (USSR)

AUTHOR: Kudryavtsev, I.V.

TITLE: Toughening the Fillets of Large Shafts by Hammer-hardening Their Surfaces (Sposob uprochneniya galteley krupnykh valov poverkhnostnym naklepom)

PERIODICAL: V sb.: Vopr. konstrukts. prochnosti stali. Moscow, Mashgiz, 1957, pp 219-223

ABSTRACT: A drawing and description are given of equipment for hammer-hardening the fillets of large shafts with repeated blows from a spherically shaped hammer mounted on a milling-machine table or a lathe bed. If work conditions are properly chosen, the work-hardened layer will attain a thickness of several millimeters, and its surface will be clean.

M.I.

1. Metals—Hardening

Card 1/1

AUTHORS: Kudryavtsev, I. V., Dor of Tech. Sc. Prof. and Rozenman, L. M., Eng. 129-7-2/16

TITLE: On the elimination of residual stresses during axial loading of surface work-hardened rods. (O snyatii ostatochnykh napryazheniy pri osevykh nagruzheniyakh poverkhnostno-naklepannykh sterzhney).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and Metal Treatment), 1957, No.7, pp.7-13 (U.S.S.R.)

ABSTRACT: The problem of the stability of residual stresses and components subjected to static or alternate loading has been studied relatively little. On the basis of theoretical considerations it appears that residual stresses can, to a certain extent, remain conserved even after a component has been stressed to the yield point or even higher. Experimental data on the removal of residual stresses by a single static loading of a rod are in agreement with this view and full removal of the stresses is reached only if the magnitude of the load exceeds appreciably the yield point; the results of Byuler (same journal, 1955, No.4, p.59) are reproduced in Fig.3, p.9, in which the changes in the residual stresses in steel rods after static tension are plotted for loads of 49.2, 65.7 and 72.3 kg/mm^2 respectively for steel with $\sigma_{0.2}$ = 63.7 kg/mm^2. Thereby, the residual stresses were produced by rapid cooling of

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On the elimination of residual stresses during X-ray loading of surface work-hardened rods (Cont.) 129-7-2/16

specimens from temperatures between 600 and 680 C. The authors of this paper studied the residual stresses in specimens of Steel 45 subjected to alternate axial loading (0.49% C, 0.30% Si, 0.69% Mn, 0.036% S, 0.026% P and 0.18% Ni). The specimens were preliminarily work-hardened by surface rolling with a three-roll device fitted onto a lathe, as a result of which the hardness at the surface increased from 170 to 260 H_V and the depth of the hardened layer was about 3 mm. Fig.5 reproduces the results of fatigue tests of smooth specimens of 25 mm with and without being subjected to work-hardening. Fig.6 shows the epures of the axial residual stresses in the work hardened specimens after loading on a pulsator with various stresses. Fig.7 represents the changes in the magnitude of residual stresses of surface layers of work-hardened specimens as a function of the loading regime. It is concluded that a certain fraction of the residual stresses can be conserved even in cases in which the axial load reaches magnitudes corresponding to the yield point of the material. The earlier observed high stability of residual stresses in the case of repeated alternate loading of rods subjected to bending or torsion occurs also in the case of alternate tensile stress by using axial loads. Extensive application of tensile

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On the elimination of residual stresses during X-ray loading of surface work-hardened rods. (Cont.) 129-7-2/16

stresses (up to 2 million cycles) amounting to 80% of the ultimate strength brings about some reduction of the residual stresses in the rods which have been work-hardened by surface rolling; however, even after such loads the magnitude of the residual compression stresses in the surface zones will not drop below 35 kg/mm^2. It can be assumed that complete elimination of the residual stresses will occur in rods work-hardened by surface rolling only after applying repeatedly axial loads of magnitudes approaching the ultimate strength established during analogous loading. The stability of the residual stresses in surface work-hardened steel specimens after alternate loading was found to be very high.
There are 7 figures, 1 table, 2 Slavic references (footnotes).

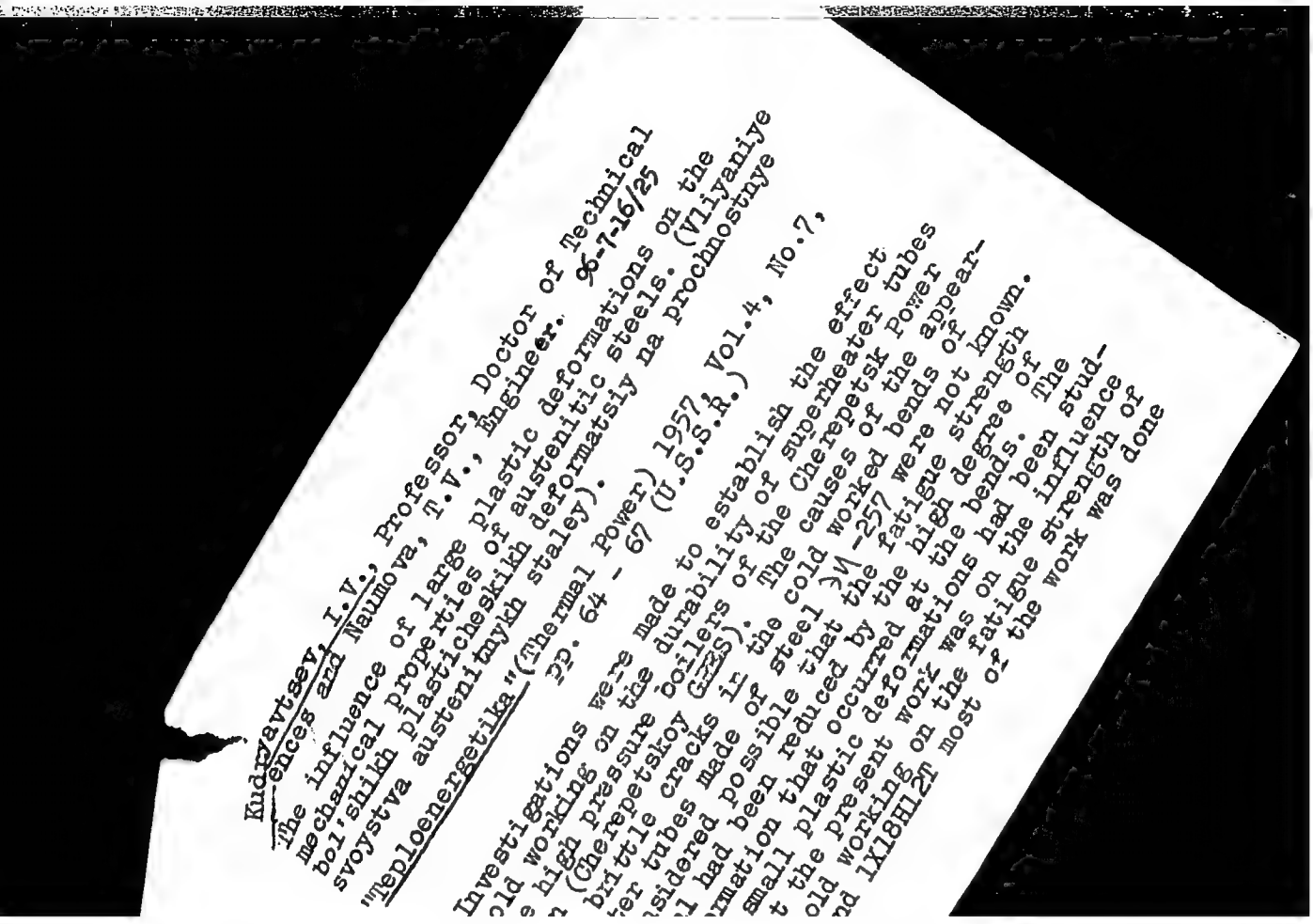
ASSOCIATION:TsNIITMASh.

AVAILABLE:

Card 3/3

KUDRYAVTSEV, I.V., doktor tekhnicheskikh nauk, professor; BALABANOV, N.A., kandidat tekhnicheskikh nauk.

Strengthening stepped shafts by embossing chamfers. Stroi.i dor.mashinostr. 2 no.7:32-34 Jl '57. (MLRA 10:7)
(Shafts and shafting)



Kudryavtsev, I.V., Professor, Doctor of Technical Sciences and Naumova, T.V., Engineer. 96-7-16/25
The influence of large plastic deformations on the mechanical properties of austenitic steels. (Vliyaniye bol'shikh plasticheskikh deformatsiy na prochnostnyye svoystva austenitnykh staley).
"Teploenergetika" (Thermal Power) 1957, Vol.4, No.7, pp. 64 - 67 (U.S.S.R.)

Investigations were made to establish the effect old working on the durability of superheater tubes s high pressure boilers of the Cherepetsk Power (Cherepetskoy GRES). The causes of the appear- brittle cracks in the cold worked bends of ter tubes made of steel 1Kh-25T were not known. sidered possible that the fatigue strength l had been reduced by the high degree of rmation that occurred at the bends. The small plastic deformations had been stud- t the present work was on the influence old working on the fatigue strength of nd 1X18H12T most of the work was done

The influence of large plastic deformations on the mechanical properties of austenitic steels. (Cont.)

96-7-16/25

on steel ЭИ-257. The analyses of the steels are as follows:

Steel	Percentage composition							
	C	Cr	Ni	W	Mo	Mn	Si	S	P
ЭИ-257	0.14	13.3	14.1	2.2	0.5	0.53	0.48	0.02	0.03
1Х18Н12Т	0.12	17.9	11.2	-	0.3	1.20	0.68	0.02	0.02

The degree of cold working is estimated from the geometry of tube bends and it is found that the greatest possible strain is 89% and the minimum 50%. Specimens were strained in torsion. The increase in the hardness of specimens of steel ЭИ-257 as a result of cold working in torsion are given in Fig.2., on the Vickers scale with a load of 10 kg. The distribution of hardness across the thickness of the section is shown in Fig. 3 where it is seen that the increase is least at the centre of the specimen. The distribution mechanical properties of steel ЭИ-257 as a result of cold working are shown in Fig. 4. The changes in other

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The influence of large plastic deformations on the mechanical properties of austenitic steels. (Cont.)

96-7-16/25

increased the hardness and strength. It has a great influence on the yield point and reduces the strain. The influence of tempering steel ЭИ-257 was investigated on specimens with 50% cold working. They were maintained for one hour at temperatures of 300°, 60(and 800 °C and tested in tension at room temperature The results are given in Fig. 5 which shows that treatment at 300 °C did not affect the tensile streng but that higher temperatures reduced it considerably Cold working in torsion reduced the impact strength of the steel, but even for very high strains the imp act strength did not fall below 10 kg/cm^2. The resu are given in Fig. 6 which shows that the impact strength is the same at room temperature and at 580 Standard impact test specimens were prepared from metal which had been cold-worked and heat-treated. The tests were carried out at room temperature and a 580 °C, the results of the tests are given in Table They show that the impact strength of steel ЭИ-257 reduced by cold-working and subsequent ageing.

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The influence of large plastic deformations on the mechanical properties of austenitic steels. (Cont.)

96-7-16/25

Fatique tests were made on smooth samples of steels ЭИ-257 and 1Х18Н12Т. The results are given in Fig. 7. From the tests it is shown that cold-working with subsequent ageing increases the fatigue limit of steel ЭИ-257 by about 37% at 20 °C. Similar cold working with the same subsequent ageing at a test temperature of 580 °C leads to a noticeable decrease in the fatigue limit (see Fig. 8).

It is concluded that the fatigue strengths of both steels are increased as a result of cold working up to 50% both at room temperature and at the working temperature of 580 °C. Further increase in the strain up to 300% does not cause a noticeable change in the fatigue limit at room temperature but at 580 °C there is some reduction in the yield limit. Thus, cold plastic working that occurs during bending of the tube cannot be the cause of fatigue failure in the super-heater tube provided that the plastic deformation does not cause cracks in the metal. The strength of steel ЭИ-257 under static load increases with cold working.

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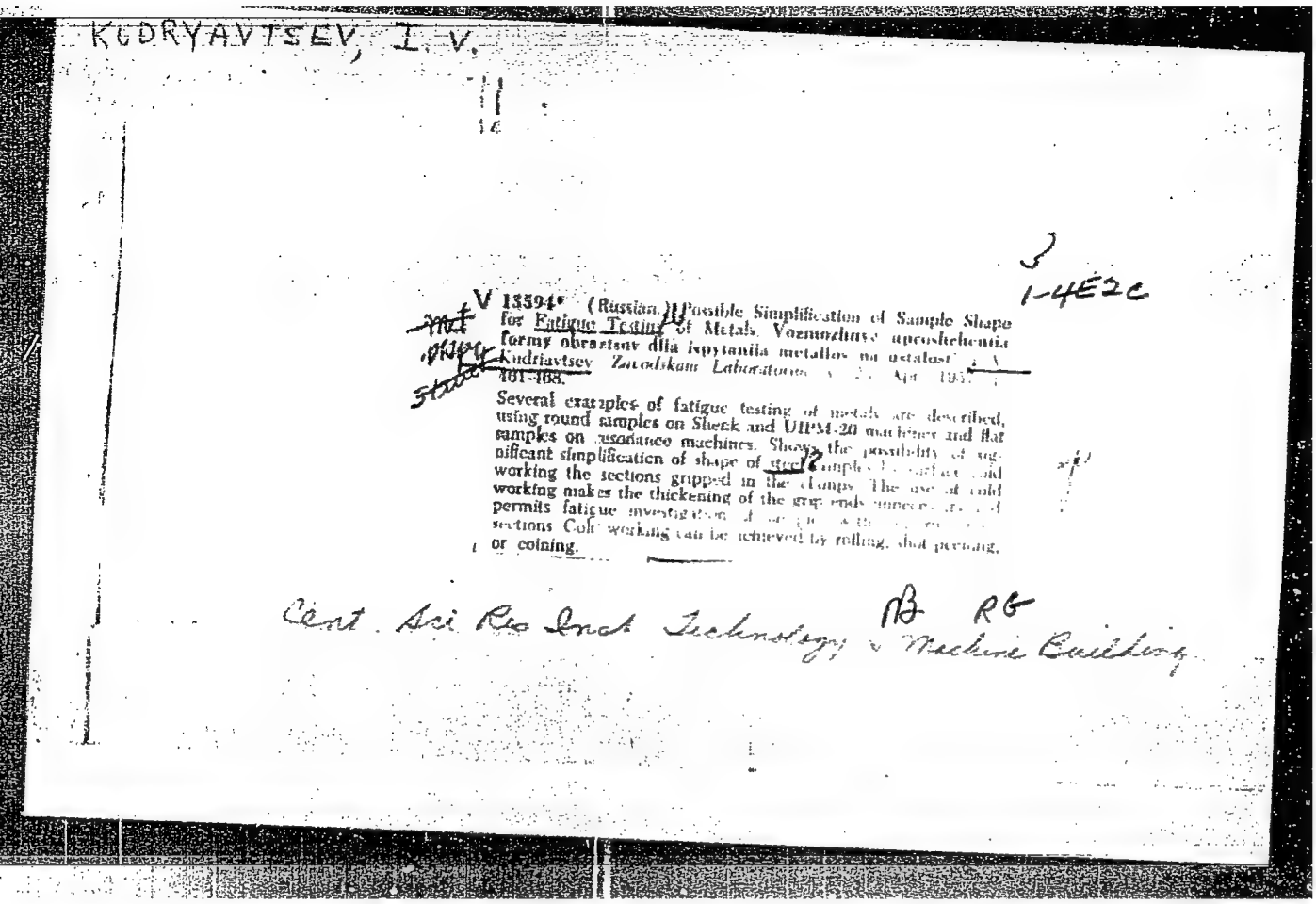

KUDRYAVTSEV, I. V.

3
1-4E2c

V 13594* (Russian) Possible Simplification of Sample Shape for Fatigue Testing of Metals. Vozmozhnoe uproshchenie formy obraztsov dlia ispytaniia metallov na ustalost' / I. V. Kudriavtsev. *Zavodskaia Laboratoriia* [Factory Laboratory] Apr 1953, 401-403.

Several examples of fatigue testing of metals are described, using round samples on Sheck and UIPM-20 machines and flat samples on resonance machines. Shows the possibility of significant simplification of shape of steel samples [illegible] cold working the sections gripped in the clamps. The use of cold working makes the thickening of the grip ends unnecessary and permits fatigue investigation [illegible] sections. Cold working can be achieved by rolling, shot peening, or coining.

Cent. Sci. Res. Inst. Technology & Machine Building

B RG

AUTHOR: Kudryavtsev, I. V., Professor, Doctor of Technical Sciences 32-10-30/32

TITLE: Comments.

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 10, pp 1267-1268 (USSR)

ABSTRACT: In his report delivered on the occasion of the 40th anniversary of the October revolution, the author in his introduction states that the remarkable progress in Soviet scientific works in the field of the investigation of the fatigue of the metals is due to the adequate equipment with experimental outfits and the elaboration of suitable methods in the USSR. In this context there are mentioned: Machines for fatigue tests "Я-8" and for corrosionslike fatigue tests "Я-8Г". As one of the first machines manufactured for the examination of wagon-and locomotive axles the author mentions an appliance which was developed according to his proposal in the "ВНИТИ"(Allunion- institute of locomotive construction in Kolomna) which now is used for large-scale production in railroad material works (for the simultaneous examination of 4 axles). The general introduction of a process of compression by the rollers of the surfaces of the axles in Soviet production is a consequence of the results of investigationsach-

Card 1/2

Comments

ieved. Larger machines for fatigue tests were developed according to the project of Yaktsevich, S.I. in the central institute of scientific investigations for technology, and machine building which make it possible to examine the round samples of a diameter up to 200 mm (machine "Y-200"), or flat samples of a cross section of 200 X 300 mm (machine "YП -200"). The two machines are built on the principle of resonance-excitation-oscillations of the rotating or revolving masses which are unequal with respect to their weight. At last also samples of the heavy test-machines are "successfully" developed in the institute of machine-engineering. (Gaft, M.E., Candidate of Technical Sciences), viz. as universal testing machine with electromagnetic resonances. (Trade mark none given). The Polytechnic Institute (A.V. Dobyagin, professor of university) at present installs, in cooperation with the turbine works, at the same place a new "Unicum" machine (so called in this report) for fatigue tests of welded shafts and hollow shafts up to 450 mm diameter at a wall-thickness up to 100 mm.

ASSOCIATION: Central Institute of Scientific Research in Technology and Machine Building (Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya)

AVAILABLE: Library of Congress

Card 2/2 1. Science-USSR-Progress 2. Metals-Fatigue

KUDRYAVTSEV, I.V., professor.

Cold working as means of increasing the fatigue strength of rolls with stationary fit. [Trudy] TSNIITMAS no.85:5-39 '57.(MLRA 10:9)
(Rolls (Iron mills)--Testing) (Shot peening)
(Rolling (Metalwork))

Kudryavtsev, I. V.

129-3-1/14

AUTHORS: Kudryavtsev, I. V., Doctor of Technical Sciences, Prof., Naumova, T. V., Eng. and Rozenman, L. M. Tekhn.

TITLE: Influence of work hardening on the mechanical properties of carbon steels. (Vliyaniye naklepa na mekhanicheskiye svoystva uglerodistykh staley).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.3, pp.2-6 (USSR).

ABSTRACT: The authors considered it of interest to study the influence of work hardening on the strength characteristics of steel, namely, hardness, impact strength, fatigue limit as well as the behaviour during static tension. The investigations were effected on the most widely used structural materials, namely, hot rolled carbon steel "45" and steel "3". For obtaining large degrees of work hardening, the method of torsion was selected, using cylindrical specimens of 19 and 22 mm dia. The maximum deformations were so chosen that there should be no cracks at the surface of the specimen, i.e. the relative elongation of the external fibres, ε, equalled 120 and 65% respectively. The results of the influence of the degree of deformation on the hardness are graphed in Fig.1, p.3. The influence of annealing for one hour at

Card 1/3

Influence of work hardening on the mechanical properties of carbon steels.

300, 600 and 800°C after maximum deformation on the hardness is graphed in Fig.2; Fig.3 gives the influence of the degree of deformation on the mechanical properties of the steel, whilst Fig.4 gives the influence of the testing temperature on the impact strength for degrees of freedom of 0, 20, 65, 80 and 120%. Fig.5 gives the change of the impact strength of steel as a function of the tempering temperature after work hardening with a maximum degree of deformation. It is concluded that large plastic deformations, which are equivalent to elongation in tension of 65 and 120%, bring about an appreciable increase in the hardness, yield point and ultimate strength of carbon steels. Simultaneously, the values of the relative elongation and contraction decrease. However, the decrease of the relative contraction of the cross section is only a slight one. Plastic deformation reduces the impact strength of both the tested steels for all the investigated temperatures (up to 600°C). The fatigue strength of the investigated steels, determined on smooth specimens, increases with increasing degree of work hardening; no increase in the fatigue strength was observed in the case of notched specimens.

129-3-1/14

Influence of work hardening on the mechanical properties of carbon steels.

Annealing of the steel at 300°C after the work hardening leads to a further increase in the hardness of the metal and to a decrease of the impact strength, whilst annealing at 600°C causes a reduction in these values. Annealing of work hardened steel at 800°C eliminates completely the changes in the mechanical properties caused by plastic deformations.
There are five figures and one table.

ASSOCIATION: TsNIITMASh.

AVAILABLE: Library of Congress.

Card 3/3

Kudryavtsev, I.V.

135-58-4-5/19

AUTHORS: Kudryavtsev, I.V., Doctor of Technical Sciences, Professor; Naumchenkov, N.Ye., Engineer; and Savvina, N.M., Candidate of Technical Sciences

TITLE: Fatigue-Limits of Electroslag-Welded Joints of Large Section Elements (Ustalostnaya prochnost' soyedineniy elementov krupnykh secheniy, vypolnennykh elektroshlakovoy svarkoy)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 4, pp 15-19 (USSR)

ABSTRACT: The article contains a detailed description of fatigue tests of welded rolled 22K-stell sheets, 250 to 300 mm thick, carried out at TsNIITMASH in collaboration with the Novo-Kramatorskiy mashinostroitel'nyy zavod (Novo-Kramatorsk Machine-Building Plant) on special testing machines for large-section specimens, designed by TsNIITMASH. The technology of tests, chemical composition of base and weld metals and results of tests are given in Tables 1 - 5. The tests were carried out with rectangular and cylindrical specimens. The following conclusions were made: joints subjected to mechanical processing possess high limits of strength; the mechanical removal of protruding weld metal

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Fatigue-Limits of Electroslag-Welded Joints of Large Section Elements

is more effective than heat treatment; machining of weld joints can eliminate heat treatment; absolute dimensions affect fatigue limits of cylindrical and flat specimens. The strength limit of 150 to 200 mm thick specimens was 25% lower than that of 20 mm thick specimens. There are 5 tables, 4 figures, 2 photographs and 5 Soviet references.

ASSOCIATION: TsNIITMASH

AVAILABLE: Library of Congress

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SOV/129-58-11-8/13

AUTHORS: Kudryavtsev, I. V., Doctor of Technical Sciences, Professor, and Balabanov, N. A., Candidate of Technical Sciences

TITLE: New Method of Treatment of Contact Surfaces of Machine Components (Novyy sposob obrabotki kontaktnykh poverkhnostey detaley mashin)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 11, pp 44-50 (USSR)

ABSTRACT: A new surface treatment of steel components was developed by I. V. Kudryavtsev and N. A. Lopatinskiy, TsNIITMASh (Author's Certificate Nr 103959) which permits simultaneously improving the fatigue strength of the component and the shear strength of the contact surfaces. Essentially the method consists of work hardening the surface by numerous hammer impacts, as a result of which a relief is produced in the form of striae with depths of 0.5 to 1 mm and larger. Micro and macro cuts reproduced in Fig.1 show that this treatment produces a fibre distribution which is favourable from the point of view of the strength; in the surface layer the hardness is considerably increased (up to 40%) and favourable residual compressive stresses (up to 60 kg/mm^2) are

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New Method of Treatment of Contact Surfaces of Machine Components

generated. This method of treatment contact surfaces is applied in thick wall frameworks of large hydraulic presses built at the Novokramatorsk Works. At TsNIITMASh strength tests were made on thus treated surfaces of flat models. In these, an increase of the relative resistance to shear of the contact surfaces as a result of the relief formation and increased fatigue strength were detected. The models, made of "Steel 3", were tested for shear and fatigue. On the basis of the obtained results, the following conclusions are arrived at:
1. The developed new method of surface treatment, which consists of work hardening and producing a relief at the surface by means of special hammers, results in a simultaneous increase of the fatigue strength and the resistance to relative shear of the components in contact. The resistance to shear increases by tens of times, whilst the fatigue strength increases to double and more.
2. The new method of treatment of contact surfaces has been successfully applied for thick walled frame structures of powerful hydraulic presses; as a result of this, the

 rigidity of the assembled frame structure increased

considerably and its carrying capacity increased to more than double.

3. The developed treatment of contact surfaces is recommended for a large number of components of machines and structures which are subjected to long duration alternating stresses and are required to have a sufficiently high rigidity; such components comprise housing frames of large machines which are assembled from several components, base plates for presses, load bearing plates of frames, etc.

4. The here described investigations provide a justified evaluation of the performance of the proposed new method of surface treatment and also provides a possibility of selecting treatment regimes for soft engineering carbon steels. There are 6 figures, 7 tables.

ASSOCIATION: TsNIITMASh

1. Steel--Surfaces 2. Steel---Hardening 3. Surfaces--Testing equipment 4. Surfaces--Test results

KUDRYAVTSEV, I.V., prof., doktor tekhn.nauk; ALEKSANDROV, B.I., dots., kand. tekhn.nauk

Fatigue strength of the 1X13 steel samples with fixed joints at high temperatures. Energomashinostroenie 4 no.12:38-41 D '58. (MIRA 11:12)

(Steel--Fatigue)

GLINER, Boris Moiseyevich [deceased]; KUDRYAVTSEV, I.V., prof., retsenzent; KOBRIN, M.M., kand.tekhn.nauk, red.; BEYZEL'-MAN, R.D., red.izd-va; BALANDIN, A.F., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Determination of mechanical and technological properties of metals] brief reference book] Opredelenie mekhanicheskikh i tekhnologicheskikh svoistv metallov; kratkoe spravochnoe posobie. Izd.2., ispr. i dop. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1959. 158 p. (MIRA 12:8)
(Metals--Testing)

KUDRYAVTSEV, I. V.

25(2,5) P. 2-4-7 PHASE I BOOK EXPLOITATION SOV/2885

Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya

Povysheniye prochnosti elementov konstruktsiy i detaley mashin (Increasing the Strength of Constructional and Machine Elements) Moscow, Mashgiz, 1959. 210 p. (Series: Its: /Sbornik/ kn. 91) 5,500 copies printed.

Ed. (Title page): I. V. Kudryavtsev, Doctor of Technical Sciences, Professor; Ed. (Inside book): A. G. Nikitin, Engineer; Tech. Ed.: V. D. El'kind; Managing Ed. for Literature on Transport Machine Building (Mashgiz): K. A. Ponomarev, Engineer.

PURPOSE: This collection of articles is intended for designers, process engineers, and scientific research workers in the machine-building industry.

COVERAGE: The collection contains papers dealing with experimental work done recently by TsNIITMASh. The experiments are concerned with the practical use of surface work hardening in industry. Industrial practices intended to increase the strength and

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service life of machine parts and constructional elements are discussed. Several articles are devoted to problems of increasing the fatigue strength of machine parts by work hardening. Industrial practices of NKMZ in Kramatorsk in external burnishing of large machine parts are presented. Tools and fixtures used in surface work hardening are described. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

This article is a report on an international conference on fatigue strength held in London in September 1956. The effects of residual stresses on fatigue stress with and without stress concentrations, the effect of residual stresses after welding, and the effect of residual stresses.

after long-time storage are discussed. The significance of residual stresses in increasing the fatigue strength of shafts by surface work hardening is pointed out.

Fringe photographs are shown of stress-concentration factors and lines of principal stresses in a cantilever shaft of rectangular cross-section with fitted bearing clamps made of IM-44 (phenolformaldehyde plastic). The stress distribution over contact areas between shaft and clamps is discussed. Conclusions are drawn on the basis of an analysis of the results of an investigation.

Stresses were determined for disks with one keyway, with

features of these phenomena and factors causing them are discussed

out. The effect of loading on the bore and shaft and the of the duration of the test (20 and 100 million cycles) were investigated. The preparation and burnshing of samples and the technique of testing are described. Results of the investigation are discussed.

Kudryavtsev, I. V., and N. A. Balabanov [Candidate of Technical Sciences]. Work Hardening of Stepped Shafts by Fillet Peening 133

Results of fatigue tests on stepped steel shafts are analyzed. Comparisons are drawn between shafts work-hardened by fillet peening and shafts not subjected to any work-hardening process. Fillet peening was accomplished on a milling machine with a special attachment having a spring-actuated striking pin with a spherically rounded end.

Barats, A. I. [Engineer]. Increasing the Life of Metallurgical-machinery Parts by External Burnishing With Rollers 123

Constructions of the burnishing devices used are described, and some problems connected with the technique

design considerations and operating techniques are discussed.

AVAILABLE: Library of Congress

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GO/ec
1-26-60

BERG, P.P., doktor tekhn.nauk; BIDULYA, P.N., doktor tekhn.nauk; GRECHIN, V.P., kand.tekhn.nauk; DOVGALEVSKIY, Ya.M., kand.tekhn.nauk; ZHUKOV, A.A., inzh.; ZINOV'YEV, N.V., inzh.; KRYLOV, V.I., inzh.; KUDRYAVTSEV, I.V., doktor tekhn.nauk; LANDA, A.F., doktor tekhn. nauk; LEVI, L.I., kand.tekhn.nauk; MALAKHOVSKIY, G.V., inzh.; MIL'MAN, B.S., kand.tekhn.nauk; SOBOLEV, B.F., kand.tekhn.nauk [deceased]; SKOMOROKHOV, S.A., kand.tekhn.nauk; STEPIN, P.I., kand.tekhn.nauk; USHAKOV, A.D., kand.tekhn.nauk; FRIDMAN, L.M., inzh.; KHRAPKOVSKIY, E.Ya., inzh.; TSYPIN, I.O., kand.tekhn.nauk; SHKOL'NIKOV, E.M., kand.tekhn.nauk; POGODIN-ALEKSEYEV, G.I., prof., doktor tekhn.nauk, red.; BOLKHOVITINOV, N.F., prof., doktor tekhn. nauk, red.toma; LANDA, A.F., prof., doktor tekhn.nauk, red.toma; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Handbook on materials used in the machinery industry] Spravochnik po mashinostroitel'nym materialam; v chetyrekh tomakh. Pod red. G.I.Pogodina-Alekseeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.3. [Cast iron] Chugun. Red.toma N.F.Bolkhovitinov i A.F.Landa. 1959. 359 p. (MIRA 13:1)
(Machinery industry) (Cast iron)

S/137/60/000/009/016/029
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 9, p. 251, # 21535

AUTHORS: Kudryavtsev, I.V., Savvina, N.M.

TITLE: Fatigue Strength of Large-Size Plate Parts

PERIODICAL: V sb.: Nekotoryye probl. prochnosti tverdogo tela, Moscow-Leningrad, AN SSSR, 1959, pp. 256-267

TEXT: An investigation was made of the cyclic strength of 50 and 200 mm thick steel plates and of an increase in the fatigue strength by hardfacing. The bending tests in one plane were carried out on special designed installations. Prismatic rod-shaped specimens of 22 K rolled carbon steel were used. The authors established the values σ_ω of the plates outside the contact zones and in the spots of contact with the clamp supports (when clamping the specimens at the extremities). At a thickness of the plates increased from 50 to 200 mm, the cyclic strength drops considerably under conditions of contact, outside the contact zones

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it almost does not vary. Strengthening hardfacing of the contact surfaces of 50 and 200-mm thick plates raises effectively their cyclic strength.

S.G.

Translator's note: This is the full translation of the original Russian abstract.

SOV/135-59-1-2/18

AUTHORS: Kudryavtsev, I.V., Doctor of Technical Sciences, Professor, and Naumchenkov, N.Ye., Engineer

TITLE: The Fatigue Strength of Electric Slag Welded Joints in Large Size Steel Castings (Ustalostnaya prochnost' elektroshlakovykh svarnykh soyedineniy v krupnykh stal'nykh otlivkakh)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 1, pp 4-9 (USSR)

ABSTRACT: Information is given on investigations carried out to determine the fatigue strength, under an alternating load, of electric slag welded joints in cast and rolled steel. Cylindrical cast "35L"-steel specimens of 200 and 20 mm diameter were tested and it was proved that the fatigue limits of the weld joints were higher than those of the base metal, due to the heterogeneity of cast steel. Fatigue strength is reduced with larger dimensions of the specimens. It was stated

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The Fatigue Strength of Electric Slag Welded Joints in Large Size Steel Castings

that the fatigue strength of cast steel is below that of rolled "22K" and "20 GSL" steel, the use of which is recommended for parts of hydro-turbines, hydraulic presses and excavators. There are 4 tables, 3 diagrams, 2 graphs, 1 photo and 7 Soviet references.

ASSOCIATION: TsNIITMASh

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S/137/63/000/001/009/019
A006/A101

AUTHORS: Kudryavtsev, I. V., Naumchenkov, N. Ye.

TITLE: Fatigue strength of electric-slag welded joints (Summary of report)

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1963, 12, abstract 1E61 (In collection: "Proyektir. i prochnost' svarn. konstruktsiy", Moscow - Leningrad, 1959, 153 - 159)

TEXT: Fatigue strength of electric-slag welded joints of various steel grades, such as 22 K (22K), 20 ГСЛ (20GSL), 35Л (35L) and 40 ХН (40KhN) is practically equal to the fatigue strength of the base metal in smooth specimens of various shapes and dimensions. In bending tests of both round and plane specimens the absolute dimensions affect the fatigue resistance. For electric-slag welded 22K plate-steel joints in large-size smooth specimens (with reinforcement removed) heat treatment is not necessary to increase the fatigue strength of parts, operating at normal temperatures. Fatigue strength of electric-slag welded 22K steel joints in the presence of stress concentrators (without reinforcement removed) decreases sharply. Heat treatment of such welded joints,

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Fatigue strength of electric-slag welded joints

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A006/A101

without reinforcement removed, increases their fatigue resistance. Case hardening is an effective means to raise the fatigue strength of electric-slag welded joints; this process can satisfactorily replace heat or mechanical treatment of weld joints. Medium-carbon cast 35L steel shows inferior fatigue properties than low-carbon rolled 22K steel, whereas low-alloy cast 20GSL steel is equivalent to 22K steel.

V. Fomenko

[Abstracter's note: Complete translation]

Card 2/2

KUDRYAVTSEV, I.V.

AUTHOR: None given SOV/129-59-1-15/17

TITLE: Book Review (Retsenziya)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 1, pp 60 - 61 (USSR)

ABSTRACT: The book "Structural Strength of Iron with Spheroidal Graphite", by I.V. Kudryavtsev, N.M. Savvina, N.B. Baranova and N.A. Balabanov, Mashgiz, 1957, is favourably reviewed by Doctor of Technical Sciences, Professor L.A. Glikman.

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25(5)

SOV/117-59-2-19/27

AUTHORS: Kudryavtsev, I.V., Doctor of Technical Sciences, Professor, and Zaytsev, G.Z., Engineer

TITLE: The Industrial Application of the Technology of Strengthening the Machine Parts (Promyshlennoye ispol'zovaniye tekhnologii uprochneniya detaley mashin)

PERIODICAL: Mashinostroitel', 1959, Nr 2, pp 31-34 (USSR)

ABSTRACT: The authors mention a new method of hardening the surfaces of metal items, worked out by the TsNIITMASH (the Central Scientific Research Institute of Heavy Machine Construction). It consists of corrugating the surface of the item, which results not only in an increase in durability of the given surface, but also increases the firmness of hold of two such surfaces laid on each other. This method is being successfully applied by the Novo-Kramatorskiy mashinostroitel'nyy zavod (Novo-Kramatorsk Machine Construction Plant) for the hardening of surfaces of framework structures assembled from thick rolled

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The Industrial Application of the Technology of Strengthening the Machine Parts

elements. An old treatment of surfaces with spray of up to 1 mm in diameter steel pellets is employed by the Gor'kovskiy avtomobil'nyy zavod (Gor'kiy Auto Plant), the Moskovskiy avtomobil'nyy zavod (Moscow Auto Plant) imeni Likhachev, the Minskiy avtomobil'nyy zavod (Minsk Auto Plant), the Stalingradskiy and Chelyabinskiy traktorostroitel'nyye zavody (Stalingrad and Chelyabinsk Tractor Construction Plants) and by the Moskovskiy trolleybusnyy remontnyy zavod Mossoveta (Moscow Trolleybus Repair Plant of the Moscow City Council). Another old method of hardening the surface by polishing with rollers is used by the Perovskiy zavod po remontu elektropodvizhnogo sostava (Perov Plant for Repair of Electric Rolling Stock), the Vagonoremontnyye zavody (RR Car Repair Plants) in Leningrad, Kiyev, Nizhnedneprovsk, the Parovozoremontnyy zavody (Locomotive Repair Plants) in Voronezh, Ufa, the

The Industrial Application of the Technology of Strengthening the Machine Parts

Khar'kovskiy zavod transportnogo mashinostroyeniya (Khar'kov Plant of Transport Machine Construction), the Uralmash-zavod (the Ural Machine Plant), the Gorlovskiy mashinostroitel'nyy zavod (Gorlovka Machine Construction Plant) imeni S.M. Kirov, the Chel'yabinskiy truboprokatnyy zavod (Chelyabinsk Pipe Rolling Plant) and by some other plants. However, the Vagonoremontnyye zavody (RR Car Repair Plants) in Kanash and Borisoglebsk, the Vagonostroitel'nyye zavody (RR Car Construction Plants) in Kaliningrad and imeni Yegorov in Leningrad, and Zavod imeni Uritskiy in Engels make no use of means of hardening the surfaces of the metal items used in their production. The production of steel pellets, spray apparatuses for them, and of rolling devices has not yet been organized. There are 3 photos, 1 diagram and 7 Soviet references.

KUDRYAVTSEV, I.V., doktor tekhn. nauk; SAVVINA, N.M., kand. tekhn. nauk.

Fatigue strength of large-sized plate parts and methods for raising this strength. Vest. mash. 39 no.1:42-47 Ja '59. (MIRA 12:1)
(Steel--Fatigue)

KUDRYAVTSEV, I.V., doktor tekhn.nauk; NAUMOVA, T.V., inzh.; ROZENMAN, L.M., inzh.

Effect of cold hardening on the durability of carbon steel.
[Trudy] TSNIITMASH 91:129-141 '59. (MIRA 12:8)
(Hard facing) (Steel--Testing)

SERENSEN, S.V., akademik, red.; KUDRYAVTSEV, I.V., doktor tekhn.nauk, retsenzent; DANILOV, L.N., red.izd-va; SOROKINA, G.Ye., tekhn.red.; GORDEYEVA, L.P., tekhn.red.

[Endurance test of machine parts; collected articles] Ispytaniia detalei mashin na prochnost'; sbornik statei. Po materialam Komiteta prochnosti NTO Mashproma. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 226 p. (MIRA 13:4)
(Machinery--Testing)

GAVRILOV, A.N., prof., doktor tekhn.nauk; DEM'YANYUK, F.S., prof., doktor tekhn.nauk; MITROFANOV, S.P., kand.tekhn.nauk; KORSAKOV, V.S., prof., doktor tekhn.nauk; IVANOV, D.P., doktor tekhn.nauk; STOROZHEV, M.V., kand.tekhn.nauk; MALOV, A.N., kand.tekhn.nauk; KUDRYAVTSEV, I.V., prof., doktor tekhn.nauk; SHNEYDER, Yu.G., kand.tekhn.nauk; SHUKHOV, Yu.V., dotsent; KAZAKOV, N.F., kand. tekhn.nauk; ZOLOTYKH, B.N., kand.tekhn.nauk; ROZENBERG, L.D., prof., doktor tekhn.nauk; YAKHIMOVICH, D.Ya., inzh.; NIKOLAYEV, G.A., prof., doktor tekhn.nauk; VLADZIYEVSKIY, A.P., doktor tekhn. nauk; SHAUMYAN, G.A., prof., doktor tekhn.nauk; KOSHKIN, L.N., kand.tekhn.nauk; BOBROV, V.P., kand.tekhn.nauk; NOVIKOV, M.P., kand.tekhn.nauk; VIKHMAN, V.S., kand.tekhn.nauk; DERBISHER, A.V., kand.tekhn.nauk; KLIMENKO, K.I., prof., doktor ekonom.nauk; VYATKIN, A.Ye., inzh.; SATEL', E.A., prof., doktor tekhn.nauk; FOFANOV, I.G., inzh.; MATVEYENKO, V.V., inzh.; KOCHETOVA, G.F., inzh., red.izd-va; EL'KIND, V.D., tekhn.red.; TIKHANOV, A.Ya., tekhn.red.

[Present status and trends of future development of technological processes in the manufacture of machinery and instruments] Sovremennoe sostoianie i napravleniia razvitiia tekhnologii mashinostroeniia i priborostroeniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 563 p. (MIRA 13:7)
(Machinery industry--Technological innovations)
(Instrument manufacture--Technological innovations) (Automation)

Kudryavtsev, I.V.

PHASE I BOOK EXPLOITATION SOV/4252

Akademiya nauk SSSR. Komissiya po tekhnologii mashinostroyeniya

Obrabotka zharoprochnykh splavov (Treatment of Heat-Resistant Alloys) Moscow, Izd-vo AN SSSR, 1960. 231 p. 3,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Nauchnyy sovet po problemam zharoprochnykh splavov.

Resp. Ed.: V.I. Dikushin, Academician; Ed. of Publishing House: V.A. Kotov; Tech. Ed.: V.V. Brizgal'.

PURPOSE: This collection of papers is intended to summarize current information on the treatment of heat-resistant alloys with a view toward coordination further research.

COVERAGE: The book is a collection of papers presented at the Conference on Heat-Resistant Alloys, held 18–21 December 1957 by the Commission on Machine-Construction Technology of the Institut mashinovedeniya AN SSSR (Institute of Machine Science, Academy of Sciences USSR). The thirty papers in the collection deal with the casting, pressure working, welding, and cutting of heat-resistant alloys. No personalities are mentioned. References accompany several of the articles.

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APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R000827210016-4"

KUDRYAVTSEV, I.V.

PHASE I BOOK EXPLOITATION SOV/4718

Sovremennoye sostoyaniye i napravleniya razvitiya tekhnologii mashinostroyeniya i priborostroyeniya (Present State of the Manufacturing Processes in the Machine and Instrument Industries and Trends for Development) Moscow, Mashgiz, 1960. 563 p. 5,000 copies printed.

Ed.: Anatoliy Nikolayevich Gavrilov, Doctor of Technical Sciences, Professor; Managing Ed. for Literature on Machine Building and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer; Ed. of Publishing House: G.F. Kochetova, Engineer; Tech. Eds.: V.D. El'kind and A.Ya. Tikhanov.

PURPOSE: This book is intended for technical and scientific personnel in the machine and instrument industries and for students and teachers of schools of higher education.

COVERAGE: The book deals with current theory and practice in the manufacturing processes of the machine and instrument industries and includes discussions on trends for development. The physical nature of the processes and their technical-economic features and possibilities are considered. Particular attention is given to new and progressive processing (supersonic machining, electric machining, cold pressworking, precision casting, precision pressing, new methods of welding, etc.). The book consists of papers presented at the All-Union

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Scientific-Industrial Conference on "Advanced Machine and Instrument Manufacturing Processes," held in 1958. The papers have been revised in the light of recent developments in the field. A chapter is devoted to the automation and mechanization of the industry. Soviet and non-Soviet references accompany some of the chapters.

TABLE OF CONTENTS:

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~~ODING, I.A.~~

KUDRYAVTSEV, I.V.

PHASE I BOOK EXPLOITATION SOV/4375

Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova

Ustalost' metallov; materialy soveshchaniya po ustalosti metallov 22-24 sentyabrya 1958 g. (Fatigue of Metals; Materials of the Conference on Fatigue of Metals, September 22-24, 1958) Moscow, 1960. 157 p. 3,500 copies printed.

Resp. Ed.: I.A. Oding, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: A.N. Chernov; Tech. Ed.: I.N. Dorokhina.

PURPOSE: This collection of articles is intended for mechanical engineers, metallurgists, and scientific research workers.

COVERAGE: The collection contains discussions relating to fatigue failure of metals, fatigue in finished parts, and methods for testing endurance. Included are a critical review of existing theories on metal fatigue, some data on physical regularity patterns, and features of steel failure caused by fatigue. Possibilities for applying a new criterion to the notch sensitivity of metals and high-strength steels are investigated. The mechanism of failure due to corrosion fatigue of metals is discussed along with pertinent experimental data. Also presented are the results of testing the fatigue strength of such metal parts as large-size plates and various parts of machines used in the petroleum industry. Problems involved in testing metals for fatigue are examined. No personalities are mentioned. Each article is accompanied by bibliographic references, most of which are Soviet.

PROBLEMS OF ENDURANCE-TESTING METHODS

ENDURANCE TESTING OF PARTS

AVAILABLE: Library of Congress (TA460.A577)

Card 4/4

VK/wrc/mas
11-9-60

KUDRYAVTSEV, I. V.

81817
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E193/E235

18.8200

AUTHORS: Kudryavtsev, I. V., Doctor of Technical Sciences, Professor, Savvina, N. M., Candidate of Technical Sciences, and Rozenman, L. M., Engineer

TITLE: Causes of the Lowering of the Fatigue Strength in the Zones of Contact

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No. 7, pp. 3-7

TEXT: The fativue limit, σ, of a metal part, subjected to an alternating stress while in intimate contact with another metallic, or non-metallic material, may vary within wide limits, depending on the properties of the two contacting materials, their relative size, and the conditions of stress. Thus, it has been reported (Ref. 1) that σ of a shaft could be decreased by a factor of 4 by pressing a bushing onto it. The experiments, described in the present paper, consisted in fatigue tests carried out on flat test pieces, made of steel 3 (0.2% C, Brinell hardness - 130, cross-section - 50 x 75 mm), gripped at both ends, and subjected to alternating bending (200 cycles/min) in one plane. The object of the investigation was to study how σ of steel 3 was affected by the material and thickness of packing strips, inserted between the

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Causes of the Lowering of the Fatigue Strength in the Zones of Contact

ends of the test piece and the grips of the testing machine in such a way that 5 to 7 mm length of the packing strip projected beyond the ends of the grips. Both visual and magnetic methods were used to pinpoint the moment at which the first cracks, due to fatigue, appeared. The typical results are reproduced in Fig. 2, showing the fatigue curves (σ, kg/mm^2 versus N x 10^6 cycles) for the test pieces tested in contact with (1) 1 mm thick aluminium, (2) 0.2 mm thick copper, (3) 0.1 mm thick copper, (4) 0.2 mm thick carbon steel, and (5) 0.8 mm thick stainless steel packing strips. Fig. 3 shows σ plotted against the thickness (mm) of the packing strips of (1) zinc, (2) pressboard, (3) stainless steel, (4) copper, (5) carbon steel, and (6) stainless steel, the experimental points in Fig. 7a and b having been obtained by the visual and magnetic methods, respectively. It was concluded that the decrease in the fatigue strength of a metal in the region of intimate contact with other material is a result of the combined action of the local stress concentration, electro-erosion, mechanical friction between the contacting surfaces, and fretting corrosion. The part played by each of these factors may vary, depending on the properties of

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Causes of the Lowering of the Fatigue Strength in the Zones of Contact

the materials present and conditions of stress. There are 3 figures, 3 tables and 5 references: 3 Soviet and 2 German.

ASSOCIATION: TsNIITMASh

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87885
S/114/60/000/008/006/010
E193/E255

18.8200 2708, 2808, 3515

AUTHORS: Kudryavtsev, I. V., Doctor of Technical Sciences, Professor and Naumova, T. V., Engineer

TITLE: Fatigue Strength of Welded Austenitic Steel Tubes

PERIODICAL: Energomashinostroyeniye, 1960, No. 8, pp. 35-37, 42

TEXT: The object of the present investigation was to determine the cause of frequent failures of the steam supply lines at the Cherepetsk GRES, where cracks, showing evidence of brittle fracture, had developed in welded austenitic steel steam pipes. Since low fatigue strength of the metal in the vicinity of the welded seams was considered to be the most likely cause of these failures, the welding procedure and subsequent heat treatment were varied, to study their effect on the fatigue strength of the tube material. The composition (nominal and factual) of the austenitic steel ЭИ257(EI257), used in this application, was as follows (in %): Nominal: 0.15 C, 13-15 Cr, 13-15 Ni, 2-2.75 W, 0.40-0.60 Mo, max. 0.70 Mn, 0.80 Si, max. 0.03 S, max. 0.085 P. Factual: 0.16 C, 14.1 Cr, 14.1 Ni, 2.30 W, 0.50 Mo, 0.49 Mn, 0.46 Si, 0.022 S, 0.019 P. The fatigue tests were carried out both at room

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S/114/60/000/008/006/010
E193/E255

Fatigue Strength of Welded Austenitic Steel Tubes

temperature and at 580°C, i.e. at the working temperature. Both unwelded and welded specimens were tested. In the former case; two methods of welding were employed; in method No. 1, the seam was formed in 15-20 passes, narrow fillets being deposited in each pass, and metal in the vicinity of the weld being allowed to cool to 50°C after each pass. In method No. 2, the seam was formed in 10-14 passes without intermediate cooling, and wider fillets were deposited in each pass. Both welded and unwelded specimens were tested after having been subjected to each of the following heat treatments: (a) stabilizing treatment (20 h at 800°C); (b) austenitizing treatment (1 h at 1050°C); and (c) austenitizing treatment (1 h at 1150°C). The endurance limit, σ_1, of unwelded steel in the as-received condition, tested at 580°C, was 29.5 kg/mm^2, and was reduced to 21.5-22.5 kg/mm^2 when given any of the above-described heat treatments. Test pieces welded by method No.1 had a considerably higher σ_1 than those made by method No. 2, the respective values being 28.5 and 21.5 kg/mm^2. The application of treatment (a) or (b) brought about a decrease in σ_1 of welded test

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E193/E255

Fatigue Strength of Welded Austenitic Steel Tubes

pieces tested at 580°C; no change in σ_1 of welded test pieces was observed after subjecting them to treatment (c). As a rule, fracture of welded test pieces due to fatigue at room temperature, started at the root of the weld, i.e. near the inside wall of the tube. It was concluded from the results obtained that, since σ_1 of the metal in the vicinity of the weld was not much lower than that of unwelded material, the failure under investigation could not have been caused by insufficiently high fatigue strength of the steel in this region. There are 5 figures, 5 tables and 4 Soviet references.

Card 3/3

KUDRYAVTSEV, I.V., professor

"Failure under repeated loads" by S.I.Ratner. Reviewed by I.V.Kudriavtsev. Zav.lab. 26 no.2:253-254 '60. (MIRA 13:5)
(Strength of materials)
(Ratner, S.I.)

KUDRYAVTSEV, I.V., prof.; SHUR, D.M., inzh.

"Structure and analysis of metal fractures" by IA.B.Fridman, T.A.Gordeeva, A.M.Zaitsev. Reviewed by I.V.Kudriavtsev. Zav. lab. 26 no.8:1037-1038 '60. (MIRA 13:10)
(Metals--Testing) (Deformations (Mechanics))
(Fridman, IA.B.) (Gordeeva, T.A.) (Zaitsev, A.M.)

MEDVEDEV, Sergey Fedorovich, doktor tekhn. nauk, prof.; KUDRYAVTSEV, I.V., doktor tekhn. nauk, prof., retsenzent; NIKITIN, A.G., inzh., red.; SAVEL'YEV, Ye.Ya., red. izd-va; SOKOLOVA, T.F., tekhn. red.; UVAROVA, A.F., tekhn. red.

[Strength of metals subjected to cyclic loads] TSiklicheskaia prochnost' metallov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 302 p. (MIRA 14:9)
(Metals)

KUDRYAVTSEV, I. V., Moscow

"Increase of Fatigue Strength by Plastic Surface Deformation."
Report submitted for the Conference on Design and Strength
Analysis, Hungarian Acad. Sci. Oct. 1961.

S/137/62/000/004/103/201
A052/A101

AUTHOR: Kudryavtsev, I. V.

TITLE: On the causes of the decrease of fatigue strength of steel in rigid joint zones

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 34, abstract 4I193 ("Ustalostn. prochnost' mater. i elem." Mater. konf. v Varshave 13-14 maya 1960 g. Varshava, 1961, 50-56)

TEXT: The causes of the decrease of the fatigue strength of steel parts in the presence of a contact with other parts are considered. The symmetrical bending tests of plane Ст.3 (St.3) samples of 50 x 75 mm in cross-section on УП-50 (UP-50) machine with pressboard gaskets of different thicknesses, Zn, Al, Cu, carbon and stainless steel gaskets at joint and also without gaskets have shown that maximum increase of σ_{-1} is achieved when using pressboard gaskets (whereby the thicker the gasket the higher the increase) and Zn gaskets. Cu, Al, carbon and stainless steel gaskets produce a lower effect. It is pointed out that the cause of the decrease of the fatigue strength in the joint zones is a combined effect of the stress concentration, electro-erosion destruction of the

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On the causes of the decrease ...

surface, mechanical wear and of fretting corrosion. The degree of the influence of each of these factors is determined by the material of contacting parts and the conditions of loading. Circular bending tests of flat Ст .45 (St.45) cylindrical samples 17.5 and 12 mm in diameter after surface strengthening (by burnishing with rolls, at deformation to the different degrees of deformation at torsion) and of non-strengthened samples have shown that burnishing compared with the torsion deformation gives a sharper increase of σ_{-1}. The increase of fatigue strength of surface cold-hardened samples in the seal zone is connected with the presence of residual stresses. This has been confirmed by testing St.45 samples after heating to 600°C and water cooling. There are 6 references.

A. Nikonov

[Abstracter's note: Complete translation]

38114

S/123/62/000/010/003/013
A004/A101

1.1100

AUTHOR: Kudryavtsev, I.V.

TITLE: Increasing the carrying capacity of threaded joints by way of plastic deformation

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 10. 1962, 9, abstract 10B45. (V sb. "Povysheniye dolgovechnosti detaley mashin poverkhnostn. naklepom", Perm', 1961, 10 - 12)

TEXT: The author describes a new method of threading by generating with a vibrating roller. The method is used for producing especially strong threaded joints at alternating loads and is intended mainly for threads more than 50 mm in diameter and up to 1,000 - 1,500 mm long. The method consists in the cold plastic deformation of the corresponding surface zones of the cylindrical blanks by the impact effect of a special assembly with vibrating roller. The latter imparts frequent successive blows which leave on the cylindrical surface of the blank to be worked a helical trace with a pitch corresponding to the given thread pitch. The threading device is fixed on the carriage of a lathe and travels together with the latter, driven by the lead screw, along the generatrix of the shaft to be worked.

Card 1/2

Increasing the carrying.....

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A004/A101

The threads produced by generating with a vibrating roller can be carried out both by pressing out the full thread profile and by reduction of a preliminarily cut thread of incomplete profile. As a result of investigating this method it was found possible to considerably increase the fatigue strength of threaded components made of different steel grades.

V. Pisarevskiy

[Abstracter's note: Complete translation]

Card 2/2

KUDRYAVTSEV, I.V.

33542
S/123/62/000/002/002/012
A004/A101

10.7400

AUTHOR: Kudriawcew, I. W.

TITLE: The causes of a decrease in the fatigue strength of steel in spots of rigid joints

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 2, 1962, 19-20, abstract 2A116 ("Wytrzymałość zmęczeniowa tworzyw i elementów metalowych", Warszawa, 1961, 167-169. Dyskus., 185, Polish)

TEXT: The author presents the results of investigating the effect of the material, the padding thickness between the specimens and the machine clamps, and also the surface pressure on the fatigue strength of the steel. Fatigue tests were carried out on the ИП-50 (IP-50) machines (symmetric cycle, frequency 2,000 rpm). The Ст. 3 (St.3) specimens had a cross section of 50 x 75 mm. Paddings were placed between the machine clamp jaws and the specimen surface being clamped. The pressure on the specimen surface attained 9 kg/mm^2 in the clamping spots. The specimens were loaded until they were destroyed or cracks appeared. The specimen was considered broken if cracks appeared which could be detected by the naked eye. The presence of cracks was determined by the

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33542
S/123/62/000/002/002/012
A004/A101

The causesof a decrease in the fatigue ...

of rigid joints is connected with stress concentrations, surface erosion, mechanical wear and corrosion. There are 4 figures and 6 references.

G. Mekhed

[Abstracter's note: Complete translation]

Card 3/3

S/129/61/000/003/011/011
E073/E335

AUTHORS: Kudryavtsev, I.V., Doctor of Technical Sciences, Professor and Rozenman, L.M., Engineer

TITLE: Fatigue Strength of Notched Rolls Which are Work-hardened on the Surface

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No. 3, pp. 55 - 57

TEXT: The authors investigated the influence of surface-hardening on the fatigue strength of rolls with circular notches made after surface work-hardening with rolls. The depth of the notches was either commensurate with the depth of the work-hardened layer or was in excess of that depth. For comparison, the authors also investigated notched specimens which had not been work-hardened. The experiments were made for verifying an assumed distribution of residual stresses in the notched zone in surface work-hardened rolls, as shown in Fig. 1, (t - depth of notch, b - depth of the work-hardened layer). If the residual stresses are distributed as shown in Fig. 1, the fatigue strength of surface work-hardened specimens

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Fatigue Strength ....

should be higher even if the depth of the notch exceeds the depth of the work-hardened layer. Hot-rolled rods, 32 mm in dia. of steel 45 (0.54% C, 0.70% Mn, 0.23% Si, 0.027% P and 0.021% S) were investigated. After annealing the blanks in the specimens had the following properties:

σ_b 63.1 kg/mm^2; σ_s 28.6 kg/mm^2; δ_5 22.5%; ψ 43.6%; H_B 187 . From this specimen steel, cylindrical fatigue specimens with circular notches of various depths were produced. To eliminate the influence of work-hardening from the cutting tool, the final dimensions were achieved by using a grinding wheel (for removing an 0.2 mm thick layer). For specimens which had been work-hardened by means of rollers, the notches were made prior to work-hardening. Work-hardening with rollers was effected on a lathe with a three-roll spring-operated device, using 20 mm dia. rolls and applying a pressure of 250 kg. Fatigue tests were carried out on a TsNIITMASh type УИПМ (UIPM) machine: alternate pure

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Fatigue Strength ....

bending of rotating specimens. Testing was on a 10 million cycle basis. Fig. 2 shows the fatigue curves for smooth (Curves 1) and notched (Curves2 - work-hardened; Curves3 - not work-hardened) specimens. In each case, the stress, kg/mm^2 is plotted versus the number of cycles, $N \times 10^6$. The fatigue limit versus depth of the circular notch is plotted in Fig. 3. Line 1 applies to specimens which were work-hardened prior to producing the notches; line 2 applies to specimens which were not work-hardened. The depth of the work-hardened layer was about 1.8 mm. It was established that surface work-hardening increases appreciably the fatigue strength of cylindrical components with a single notch, whereby this notch can be considerably deeper than the depth of the work-hardened layer. The favourable influence of surface work-hardening for specimens with single notches is explained by the redistribution of the residual compression stresses in the notch zone. In the case of multiple notches, there is no

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Fatigue Strength ....

difference between the behaviour of surface work-hardened and non-surface work-hardened specimens.
There are 4 figures.

ASSOCIATION: TsNIITMASh

Fig. 1:

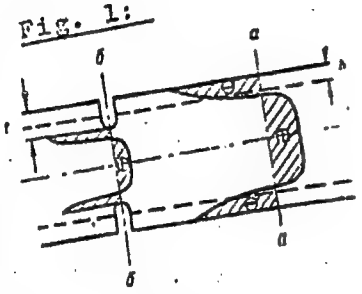
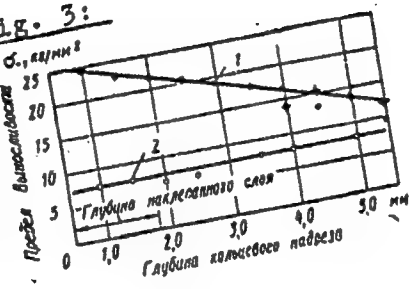


Fig. 3:



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24553

18.8200
11730

S/182/61/000/008/004/005
D038/D113

AUTHOR: Kudryavtsev, I.V.

TITLE: Investigating fatigue strength of heavy press parts on large-section specimens

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 8, 1961, 34-38

TEXT: The article deals with an investigation on fatigue strength in flat and cylindrical specimens. The У-200 (U-200), УП-200 (UP-200) and УП-50 (UP-50) resonance-type testing machines designed and constructed by the TsNIITMASh were used. The UP-200 machine (Fig. 1) was used for the circular bending of 150 and 200 mm diam specimens along the periphery. The machine comprised an oscillator, an inertia vibrator with a drive, a frame, a hoisting device, a motor generator set, and a control panel. The machine oscillator consisted of the tested specimen bearing a 1100 mm diam disc at each end, each disc containing sets of inner and outer dished springs. The tension in the specimens was measured by wire-wound resistor transmitters. The following took part in the research work and in the designing, construction

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S/182/61/000/008/004/005
D038/D113

Investigating fatigue strength ....

and debugging of the special equipment: Candidates of Technical Sciences, S.I. Yatskevich, N.M. Savvina, N.A. Balabanov; engineers, N. Ye. Naumchenkov, V.M. Andrenko, and L.N. Burmistrov. A new process of knurling adjoining contact surfaces of thick-walled press frames submitted by I.V. Kudryavtsev and N.A. Lopatinskiy (Author's Certificate No. 103959, 28/IX, 1955) is investigated. It is stated that (1) knurling neutralizes the deleterious effect of contact corrosion and concentration of stresses of fatigue strength in the contact surfaces, and that (2) the knurled surfaces have better shear resistance than milled or planed surfaces. A new semi-automatic multi-spindle machine tool designed by the TsNIITMASh and built by the Novo-Kramatorskiy mashinostroitel'nyy zavod (The Novo-Kramatorsk Machine-Building Plant) was used for knurling over 2000 m^2 of surfaces. The percentage chemical composition of 22K (22K) carbon steel, used for rolling 250 mm thick specimens and tested for fatigue strength on the UP-200 machine, was as follows: 0.18-0.24 C, 0.19-0.28 Si, 0.74-0.85 Mn, 0.035-0.038 S, 0.013-0.017 P. The author concludes that although it is possible to increase the fatigue strength in large-section specimens by cold hardening the surface, the possibility has not yet been confirmed experimentally. There are 4 figures, 6 tables and 2 Soviet references.

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Investigating fatigue strength ....

24553

S/182/61/000/008/004/005
D038/D113

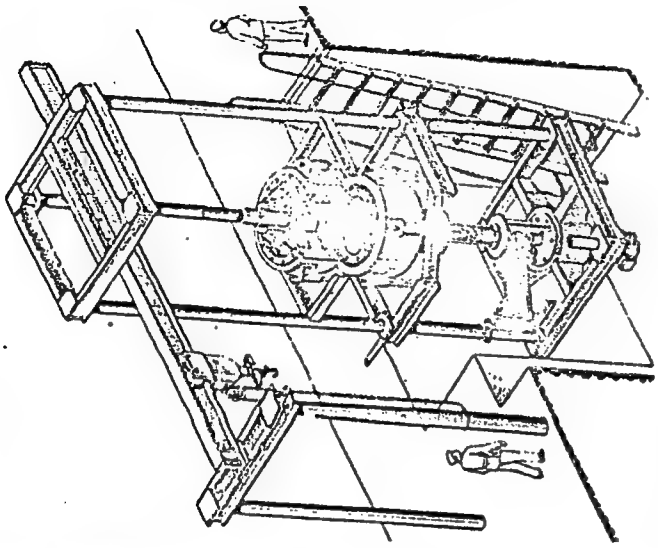

Fig. 1.
General view of the U-200 machine for testing fatigue strength of specimens up to 200 mm diam.

Card 3/3

KOLYAVTSEV, I.V., doktor tekhn.nauk, prof.; [illegible], Ye.V., inzh.

Increasing the hardness of steel by peening. Metalloved. i term. obr. met. no.10:29-33 O '61. (MIRA 14:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Steel—Cold working)
(Shop peening)

S/032/61/027/004/011/026
B103/B201

AUTHOR: Kudryavtsev, I. V.

TITLE: Method of determining the endurance limit from a single sample

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 434-441

TEXT: The author of the present paper describes the results obtained from his comprehensive tests based on the method of endurance limit determination by L. Locati (Refs. 1 and 2, see below), using only a single sample. He found that this method well satisfied requirements under operational conditions and where larger workpieces were involved. Other usual determination methods are suited for research purposes only, and are both too cumbersome and too expensive for use in continuous quality control. L. Locati has based on the hypothesis by M. A. Miner (Ref., Footnote 1), which concerns the summation of relative damages of workpieces exposed to variously strong and changing stresses. According to this hypothesis, a workpiece suffers a fatigue breakdown if the sum of the abovementioned damages attains unity:

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Method of determining the ...

$\sum \frac{n_i}{N_i} = 1$; where n_i denotes the number of stress cycles undergone by a workpiece at a given level of changing stresses (σ_i), N_i the number of cycles which, at equal σ_i, would cause the sample to break. The author checked L. Locati's method on the following samples: 1) smooth "cantilever samples" of steel rods, 12 mm in diameter (bending under torsion); 2) smooth samples of cast steel of the type 35 Л (35L), 20 mm in diameter (round bending under torsion); 3) round samples of steel 35 with thread УП (UP) 78 × 12, 78 mm in diameter with hardening due to riveting (symmetrical bending in a plane); 4) round samples of steel 45, 9 mm in diameter, with annular indentation (h = 0.4 and R = 0.3 mm) (round bending on Schenk machines). A summary is given as follows: I) when subjecting samples to gradually increasing stresses, L. Locati's method gives satisfactory results if the task consists in establishing, on the basis of a single sample, the agreement of the endurance limit of a set with the value found earlier by a more precise endurance test. II. In the author's opinion, the relation

Method of determining the ...

$T = \frac{\Delta\sigma}{n}$, $kg/mm^2 \cdot cycle$ constitutes the main characteristic of the gradual change of stresses. In his tests, T varied from $0.5 \cdot 10^{-5}$ to $2.5 \cdot 10^{-5}$. All values in this range proved to be acceptable. III. L. Locati's method will be further extensively checked from all angles. For the time being, it cannot yet be recommended for cases in which no data are available concerning the position of endurance limit curves. Miner's formula constitutes merely an approximation. In the general case it reads $\sum \frac{n_i}{N_i} = a$, where a is somewhat larger than unity and is dependent upon both the type of the sample material and the kind of stress. The value a must therefore be further defined in the experimental way. IV. In cases where the sample, with data concerning the endurance limit curves being only restrictedly available, is subjected to a gradual stress, the author bases on his tests to recommend the following orientation parameters: 1) $T = \frac{\Delta\sigma}{n} = (1 \div 1.5) \cdot 10^{-5}$. The break in endurance limit curves (in laboratory samples) corresponds to the abscissa $(1.5 \div 2.0) \cdot 10^6$.

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Method of determining the ...

3) The spread of endurance limit values, which determines the distance between the horizontal sections of the curves is (for similar laboratory samples) ± 6% and ± 10% for samples or workpieces from a series production. V. L. Locati's method will be suited, above all, as a control method, and to a lesser degree as a method of endurance limit determination. If the tester possesses at least a few data concerning the curves, Locati's method may also be applied, but only for an approximation. (L. Locati, Ref. 1: La Metallurgia Italiana, no. 9, 1955; Ref. 2: ibid. no. 5). There are 9 figures, 4 tables, and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: Footnote 1: M. A. Miner, Applied Mechanics, v. 12, no. 3, 1945.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building)

TUMANOV, A.T., zasluzhennyy deyatel' nauki i tekhniki RSFSR;
DAVIDENKOV, V.V., akademik; SERENSEN, S.V., akademik;
KURDYUMOV, G.V., akademik; BOCHVAR, A.A., akademik;
KISHKIN, S.T.; ZAYMOVSKIY, A.S.; SHCHAPOV, N.P., prof.;
KUDRYAVTSEV, I.V., prof.; VITMAN, F.F., prof.; KISHKINA,
S.I., prof.

IAkov Borisovich Fridman; on the fiftieth anniversary of his birth. Zav.lab. 27 no.7:919-920 '61. (MIRA 14:7)

1. Akademiya nauk USSR (for Davidenkov, Serensen). 2. Chleny-korrespondenty Akademii nauk SSSR (for Kishkin, Zaymovskiy).
(Fridman, IAkov Borisovich, 1911-)

KUDRYAVTSEV, I.V., doktor tekhn.nauk, prof.; SAVVINA, N.M., kand.tekhn. nauk

Increasing the carrying capacity of large stepped shafts made of alloyed steels. Vest.mash. 41 no.11:11-15 N '61. (MIRA 14:11)
(Steel--Hardening)

VASIL'YEV, Vladimir Viktorovich; KUDRYAVTSEV, I.V., doktor tekhn. nauk, retsenzent; DANILOV, L.N., red. izd-va; GORDEYEVA, L.P., tekhn. red.

[Stress concentration in angle elements and parts having a stepped shape]Kontsentratsiia napriazhenii v uglovykh elementakh i detaliakh stupenchatoi formy. Moskva, Mashgiz, 1962. 72 p. (MIRA 15:10)
(Strains and stresses)

KUDRYAVTSEV, I. V.

PHASE I BOOK EXPLOITATION SOV/6025

Soveshchaniye po ustalosti metallov. 2nd., Moscow, 1960.

Tsiklicheskaya prochnost' metallov; materialy vtorogo soveshchaniya po ustalosti metallov, 24 - 27 maya 1960 g. (Cyclic Metal Strength; Materials of the Second Conference on the Fatigue of Metals, held May 24 - 27, 1960) Moscow, Izd-vo AN SSSR, 1962. 338 p. Errata slip inserted. 2800 copies printed.

Resp. Ed.: I. A. Oding, Corresponding Member of the Academy of Sciences of the USSR; Ed. of Publishing House: A. N. Chernov; Tech. Ed.: A. P. Guseva.

PURPOSE: This collection of articles is intended for scientific research workers and metallurgists.

COVERAGE: The collection contains papers presented and discussed at the second conference on fatigue of metals, which was held at the Institute of Metallurgy in May 1960. These papers deal with the nature of fatigue fracture, the mechanism of formation

Card 1/